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Nomophobia as a Silent Addiction: Knowledge Among Future Nurses in Southern India—A Descriptive Cross-Sectional Study

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ABSTRACT

Introduction: Nomophobia, the fear or anxiety of being without access to a mobile phone, is an emerging behavioural health issue among young adults. Nursing students frequently use smartphones for academic and social purposes, making awareness of nomophobia essential for promoting healthy technology use.

Objective: To assess the level of knowledge regarding nomophobia among student nurses and to determine its association with selected socio-demographic variables.

Materials and Methods: A descriptive cross-sectional study with an exploratory approach was conducted among 100 B.Sc. Nursing students at a selected college in Thalassery, Kerala. Participants were selected using simple random sampling (lottery method). Data were collected using a structured, self-administered questionnaire consisting of socio-demographic variables and 15 multiple-choice questions assessing knowledge of nomophobia. Each correct response was awarded one mark (total score: 0–15). Content validity was established through expert evaluation (CVI = 0.85), and reliability was confirmed using test–retest and internal consistency methods (Cronbach's alpha = 0.83). Descriptive and inferential statistics were applied for data analysis.

Results: Among the participants, 52% demonstrated good knowledge, 47% had average knowledge, and 1% had poor knowledge regarding nomophobia. Significant associations were found between knowledge level and age ($p = 0.002$), academic position ($p < 0.001$), and years of mobile phone usage ($p = 0.003$). No significant association was observed between knowledge and gender, type of mobile phone used, participation in public seminars, or primary reason for mobile phone use ($p > 0.05$).

Conclusion: Although the majority of nursing students had good knowledge regarding nomophobia, a considerable proportion demonstrated only average awareness. Educational interventions and integration of digital well-being concepts into the nursing curriculum are recommended to enhance knowledge and encourage responsible smartphone use.

Keywords: Nomophobia, nursing students, knowledge, smartphone use, digital well-being, cross-sectional study.

INTRODUCTION

Mobile phones play such a significant role in today's lives. It helps to stay connected with others and provide us a sense of security. It aids in work, chat with family and friends, take pictures, buy clothes or books, and even control home appliances. With the increasing affordability and accessibility of smartphones, dependency on these devices has become a growing concern.

Nomophobia, a term coined to denote "no mobile phone phobia," describes the discomfort or anxiety caused by being out of contact with a mobile device or disconnected from digital communication [1]. The impact of nomophobia on students is multifaceted, influencing their mental well-being, academic performance, social relationships, and overall quality of life. Research on smartphone addiction consistently shows that excessive and compulsive mobile phone use can contribute to numerous health concerns, including increased anxiety, depressive symptoms, and disturbances in sleep patterns. These effects highlight the growing need to understand and address nomophobia as a significant issue among students [2].

In today's digitally connected world, university and college students—especially those enrolled in healthcare and nursing programs—are increasingly dependent on smartphones for academic activities, communication, clinical learning, and social engagement. Evidence from a recent systematic review and meta-analysis involving 11,219 nursing students demonstrated that 28% experienced mild, 49% moderate, and 15% severe nomophobia, highlighting the widespread nature of this phenomenon. The high prevalence of nomophobia among future healthcare professionals necessitates greater attention to preventive and intervention strategies within nursing education settings to promote healthy technology use and psychological well-being. [3].

Recent study conducted among BSc nursing students in Kollam, Kerala, showed that most students used smartphones for about five hours daily, with 42% checking their phones fewer

than ten times a day. The mean age was 21 years. Only 2% of students had severe nomophobia, while 33% had moderate and 54% had mild levels; 11% had no nomophobia [4].

Research indicates that students with mobile phone addiction often exhibit reduced learning ability, poor concentration, and increased distractibility, all of which negatively affect academic performance. This issue is particularly concerning in the field of nursing education, where students are expected to develop strong clinical judgment, attention to detail, and professional responsibility [5].

In health-care settings, the presence of nomophobia among nursing students can have serious implications. Excessive phone use may lead to neglect of essential tasks, forgetting critical patient information, making careless errors, and ultimately compromising the quality of patient care. As future health-care providers, nursing students must be aware of the risks associated with uncontrolled mobile phone use. Therefore, assessing the knowledge regarding nomophobia among nursing students is vital.

This study aims to assess student nurses' knowledge regarding nomophobia to promote awareness and encourage preventive measures. This concern is crucial, considering that the future workforce of nursing must manage modern digital tools responsibly, maintaining balance between technological benefits and the risks of over dependence.

Research question

1. What is the knowledge level of student nurses regarding nomophobia?
2. What factors are significantly associated with the level of knowledge regarding nomophobia among student nurses?

Objective

1. To assess the knowledge regarding nomophobia among nursing students.

2. To find the association between knowledge regarding nomophobia and selected socio-demographic variables among nursing students.

MATERIALS AND METHODS

Research Design and Approach

A descriptive cross-sectional design with an exploratory approach was adopted for the present study, to assess the knowledge level regarding nomophobia among nursing students. The descriptive design was considered appropriate to describe and document the existing level of knowledge and to determine the association between knowledge scores and selected socio-demographic characteristics. The exploratory approach was used to gain insights into the level of awareness and understanding of nomophobia, an emerging behavioural health issue among students.

Study Design and Setting

This study adopted a descriptive cross-sectional design and was conducted in a reputed college of nursing in Thalassery, Kerala, India. The setting was selected based on accessibility, feasibility, and the availability of an adequate number of participants to meet the study objectives.

Study Population

The study population comprised undergraduate student nurses enrolled in the Bachelor of Science in Nursing (B.Sc. Nursing) program. Students from all academic years (first, second, third, and fourth year) were considered eligible. Students who were absent during the data collection period and those unwilling to participate were excluded from the study.

Sample Size and Sampling Method

The sample size consisted of 100 undergraduate nursing students. The size was determined based on

feasibility and the availability of eligible participants within the study setting and was considered adequate for a descriptive cross-sectional study aimed at assessing knowledge levels.

A simple random sampling technique was employed using a computer-based lottery method to ensure unbiased selection of participants.

Sampling Details

A comprehensive list of all eligible students across the four academic years was obtained from institutional records, forming the sampling frame. Each student was assigned a unique identification number. These identification numbers were entered into a computer database, and randomization was performed using Microsoft Excel's random number generator.

The list was then randomized, and the first 100 unique identification numbers generated were selected as study participants. This procedure ensured that each eligible student had an equal and independent probability of selection, thereby minimizing selection bias and enhancing the transparency and replicability of the sampling process.

Recruitment of Students

The selected students were approached and informed about the purpose and nature of the study. Participation was voluntary, and informed consent was obtained prior to data collection. Students who declined participation or were unavailable at the time of data collection were excluded

Variables

Socio-demographic variables

Included age, gender, year of study, type of mobile phone used, participation in public seminars, years of mobile phone usage, and most frequent reason for using mobile phones.

Research variable

Knowledge regarding nomophobia

Tool and Technique

A structured questionnaire developed by the researcher was used as the tool for data collection. The tool was prepared after extensive literature review and expert consultation due to the non-availability of a standardized instrument for measuring knowledge on nomophobia.

The development of the questionnaire was guided by existing conceptual frameworks of nomophobia and related instruments, particularly the Nomophobia Questionnaire (NMP-Q) [6], which identifies key dimensions of mobile phone dependence. Core domains derived from the literature included fear of being unable to communicate, loss of connectedness, inability to access information, and excessive reliance on mobile devices. While the NMP-Q primarily assesses the severity of nomophobia, these domains were adapted to generate knowledge-based items appropriate for nursing students. Furthermore, principles from behavioural addiction and technology dependence were incorporated to ensure a comprehensive conceptual foundation. The questionnaire encompassed items related to the definition, causes, symptoms (early and late), consequences, management and prevention of nomophobia. The tool consisted of two sections:

Section A - contained seven items related to socio-demographic data such as age, gender, academic year, type of mobile phone, participation in public seminars for raising awareness regarding adverse effects of mobile phone, duration of mobile phone use, and main reason for mobile phone usage.

Section B - comprised of 15 multiple-choice questions to assess knowledge related to nomophobia, including its definition, characteristics, signs and symptoms, predisposing factors, health impact, preventive measures, and management. Each correct response was awarded one mark, and incorrect responses received zero marks. The total possible score ranged from 0 to 15 and was graded as follows: scores 11–15 was considered as good knowledge, scores 6–10 as average knowledge, and

scores 0–5 as poor knowledge.

Validity and Reliability of the tool

The content validity of the instrument was established (CVI -0.85) through evaluation by a panel of experts. Based on their feedback, modifications were made for clarity and relevance. The reliability of the tool was assessed through the test-retest method and internal consistency analysis, which confirmed that the tool was reliable for use with Cronbach Alpha value of 0.83.

Pilot study

A pilot study was conducted among 10 nursing students to evaluate the feasibility, clarity, and practicability of the instrument and study procedures. Participant feedback indicated that the items were generally clear; however, minor issues related to wording and item sequence were identified. Based on these observations, slight modifications were made to improve clarity and ensure a logical flow of the questionnaire. The pilot study also provided insights into the time required for completion and the ease of administration of the tool. No significant difficulties were encountered during data collection. Overall, the pilot findings confirmed the feasibility of the study and the suitability of the instrument for the main study.

Data collection

Data collection was carried out on a convenient date and time, scheduled in consultation with the course coordinators of each batch. Participants were assembled in a classroom setting, and written informed consent was obtained prior to participation. They were assured of the anonymity and confidentiality of their responses and informed that participation was voluntary, with the right to withdraw at any time without any consequences. Following this, the questionnaire was administered by the researchers. Clear and standardized instructions regarding the purpose of the study, method

of responding, and time allocation were provided prior to administration. The questionnaire was self-administered, and participants were given 20 minutes for completion. No personal identifiers were collected to ensure anonymity. The researchers remained in the classroom during data collection to address procedural queries without influencing participants' responses. All completed questionnaires were collected immediately after the allotted time.

Ethical consideration

The study protocol adhered to the ethical principles outlined in the Declaration of Helsinki and was approved by the Institutional Review Board (IRB) and the Institutional Ethics Committee (IEC) of Malabar Cancer Centre (PGIOSR) (No. 161/IEC-ERC/13/MCC/22-8-2023, dated 22 August 2023). Formal administrative permission to conduct the study was obtained from the study setting.

Informed consent was obtained from all participants. Anonymity and confidentiality of the data were maintained throughout the study.

Statistical analysis

Statistical analysis was performed using SPSS Statistics version 25. Both descriptive and inferential statistical methods were employed. Descriptive statistics, including frequency and percentage, were used to summarize the socio-demographic characteristics of the participants and their knowledge levels regarding nomophobia. Inferential statistical analysis was carried out to examine the association between selected socio-demographic variables and knowledge regarding nomophobia. The Pearson Chi-square test was used when the assumptions for Chi-square analysis were satisfied. Fisher's Exact Test was applied for 2×2 contingency tables with low expected cell frequencies, whereas the Fisher–Freeman–Halton Exact Test was used for larger contingency tables in which more than 20% of the cells had expected frequencies less than 5. As only one participant was categorized under poor knowledge, the poor and average knowledge categories were merged for

inferential analysis to ensure the validity of the statistical tests. A *p*-value of less than 0.05 ($p < 0.05$) was considered statistically significant. The results were organized and presented in tables and, where appropriate, in figures, following appropriate analysis and interpretation.

RESULTS

A total of 100 questionnaires were distributed to the study participants, all of which were completed and returned, resulting in a 100% response rate. The collected data were included in the final analysis, and a summary of the sample's socio-demographic characteristics is presented in Table 1.

Variable	Frequency (n)	Percentage (%)
Age		
18	06	06
19	21	21
20	23	23
21	22	22
22	26	26
23	02	02
Gender		
Male	12	12
Female	88	88
Academic position		
1st Year	01	01
2nd Year	47	47
3rd Year	26	26
4th Year	26	26
Type of Mobile phone used		
Basic Mode	04	04
Advanced Mode	96	96
Reason for using Mobile phone		
Calling	12	12
Gaming	02	02
Social networking	78	78
Texting	08	08
Duration of Mobile phone usage		
For 2 years	16	16
2-3 years	23	23
More than 3 years	61	61
Participation in public seminars/ conferences		
Yes	46	46
No	54	54

Table 1. *Frequency and percentage distribution of sample according to socio-demographic variables (N=100).*

The majority of the sample (26%, n = 26) were aged 22 years, whereas 6% (n = 6) were 18 years and 2% (n = 2) were 23 years. The sample was predominantly female (88%, n = 88), with males comprising 12% (n = 12).

In terms of academic position, nearly half of the participants were second-year B.Sc. Nursing students (47%, n = 47), while only 1% (n = 1) were from the first year. A large proportion of participants (96%, n = 96) used advanced mobile phones, compared to 4% (n = 4) using basic models.

Regarding the duration of mobile phone use, 61% (n = 61) reported usage for more than 3 years, 23% (n = 23) for 2–3 years, and 16% (n = 16) for up to 2 years. Social networking was the most common purpose of mobile phone use (78%, n = 78), whereas gaming was reported by only 2% (n = 2) of participants.

More than half of the participants (54%, n = 54) had not attended any public seminars or conferences related to the adverse effects of mobile phone use, while 46% (n = 46) reported participation in such programs.

Level of Knowledge	Frequency (f)	Percentage (%)
Poor	1	1.0
Average	47	47.0
Good	52	52.0

Table 2. *Frequency and percentage distribution of sample based on level of knowledge regarding nomophobia (N=100).*

Table 2 shows that most of the sample 52 (52%) have good knowledge regarding nomophobia, 47(47%) have average knowledge and 1 (1%) had poor knowledge.

Table 3 depicts the association between socio-demographic factors and knowledge regarding nomophobia. In particular, for the inferential analyses presented in Table 3, the “Poor” and

"Average" categories shown in Table 2 were merged into a single category due to the limited number of observations in the "Poor" category.

Variable	Knowledge regarding Nomophobia		Test Statistic	df	*p*-value
	Average	Good			
Age					
18	03	03			
19	13	08			
20	15	08	Fisher–Freeman–Halton Exact Test	—	**0.002**
21	13	09			
22	03	23			
23	01	01			
Gender					
Male	08	04	$\chi^2 = 1.904$	1	0.168
Female	40	48			
Academic position					
1st year	0	01	- Fisher–Freeman–Halton Exact Test	—	**<0.001**
2nd year	30	17			
3rd year	14	12			
4th year	04	22			
Type of mobile phone used					
Basic mode	03	01	Fisher's Exact Test	—	0.27
Advanced mode	45	51			
Duration of mobile phone use					
For 2 years	12	04	$\chi^2 = 11.9$	2	**0.003**
2 to 3 years	15	08			
More than 3 years	21	40			
Most frequent reason for using mobile phone					
Calling	06	06			
Gaming	01	01	Fisher–Freeman–Halton Exact Test	—	0.092
Social networking	38	40			
Texting	03	05			
Participation in public seminars					
Yes	19	27	$\chi^2 = 1.53$	1	0.216
No	29	25			

Table 3. *Association between knowledge regarding nomophobia and selected socio-demographic variables. Significant tests were reported in bold in the table.*

The results indicated that there is a significant association between knowledge regarding nomophobia

and the variables age, academic position, and duration of mobile phone usage at ($p < 0.05$). No significant association was found between knowledge regarding nomophobia and gender, type of mobile phone used, participation in public seminars, and with the reason for using mobile phones.

DISCUSSION

The present study found that more than half of the nursing students (52%) demonstrated good knowledge regarding nomophobia, while 47% had average knowledge and only 1% had poor knowledge. These findings suggest that the majority of participants had satisfactory awareness of nomophobia and its potential consequences.

These findings contrast with those reported by Shalini et al. [7], who found that only 8.3% of nursing students had good knowledge regarding nomophobia, whereas 50% demonstrated poor knowledge. In contrast, a study evaluating a structured teaching programme among nursing students reported a significant improvement in knowledge following the intervention, highlighting the effectiveness of educational strategies in enhancing awareness regarding nomophobia [8]. Similarly, a study among college students in Punjab found that most participants had good knowledge of smartphone use and nomophobia [9]. Collectively, these findings suggest increasing awareness of nomophobia among young adults and support the value of educational interventions in promoting knowledge regarding responsible smartphone use.

The present findings are particularly relevant in light of growing international evidence highlighting the burden of nomophobia among university and nursing students. A systematic review and meta-analysis by Tuco et al. [10] reported high prevalence rates of moderate and severe nomophobia among university students worldwide. Likewise, Guillari et al. [11] identified moderate-to-severe nomophobia among a substantial proportion of nursing students and reported associations with psychological distress, anxiety, depression, sleep disturbances, impaired academic performance, reduced concentration, and potential risks to patient safety during clinical practice. Similarly, Lazo-

Caparros et al. [12] demonstrated significant associations between problematic smartphone use and adverse psychological, academic, and clinical outcomes among nursing students. Recent primary studies have further documented a high prevalence of nomophobia among nursing students and its associations with social anxiety, procrastination, smartphone-use behaviours, and academic factors [3,13–16]. Moreover, nomophobia has been shown to be strongly associated with smartphone addiction and distraction, suggesting that excessive smartphone dependence may contribute to broader behavioural and psychological concerns [17]. Collectively, these studies indicate that nomophobia is a prevalent and multifaceted phenomenon among university and nursing students, with important implications for psychological well-being, academic performance, and professional practice. Although the present study assessed knowledge regarding nomophobia rather than its prevalence, the high prevalence reported internationally underscores the importance of ensuring that nursing students possess adequate awareness of the condition and its consequences.

In the present study, age, academic position, and years of mobile phone use were significantly associated with knowledge regarding nomophobia. These findings are consistent with previous studies that identified age- and education-related factors as important determinants of awareness regarding nomophobia [7,18]. The significant association between years of mobile phone use and knowledge may reflect greater exposure to both the benefits and adverse effects of smartphone use over time, thereby increasing awareness of smartphone-related behavioural concerns [19]. In contrast, gender, type of mobile phone, participation in public seminars, and the primary reason for mobile phone use were not significantly associated with knowledge. The absence of a gender difference is consistent with findings reported by Khummukcham and Thomas [20], although studies conducted in other settings have reported higher nomophobia levels among female students, suggesting possible cultural and contextual influences on smartphone-use patterns [21].

While previous research has predominantly focused on the prevalence, predictors, and psychosocial consequences of nomophobia, relatively few studies have examined nursing students' knowledge

regarding the condition. The present study contributes to addressing this gap by demonstrating that a majority of nursing students possess good knowledge regarding nomophobia and by identifying factors associated with knowledge levels. Nevertheless, knowledge alone may not necessarily translate into healthy smartphone-use behaviours. Given the growing evidence linking nomophobia with adverse psychological, academic, and clinical outcomes, integrating educational content on digital health, responsible smartphone use, and digital professionalism into nursing curricula is warranted. Such interventions may enhance awareness, promote healthier technology-use behaviours, strengthen professional conduct, and contribute to safer patient care in clinical settings.

Implications

The findings emphasize the growing awareness of nomophobia among nursing students. However, nearly half of the participants still had only average or poor knowledge, indicating a need for continuous educational interventions, workshops, and curriculum integration focusing on digital dependency and its psychosocial consequences.

Limitations of the study

The study was conducted among 100 nursing students from a single institution, which limits the generalization of the findings to other colleges or universities. As the study used a descriptive cross-sectional design, it captured data at one point in time and could not determine causality or changes in knowledge over time.

The use of a self-administered questionnaire may have introduced self-report bias, as participants' responses could have been influenced by social desirability and recall bias. Additionally, participants may have tended to complete all items in the knowledge questionnaire, potentially resorting to guessing, which could have introduced bias in the assessment of knowledge levels.

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Conflict of interest

The authors report no conflict of interest.

Authors' contribution

Dr. Rohini T.: Conception, Design, Supervision, Funding, Materials, Data Collection and Processing, Analysis and Interpretation, Literature Review, Writing and Critical Review

Dr. Binuja P.: Conception, Design, Supervision, Funding, Materials, Data Collection and Processing, Analysis and Interpretation, Literature Review, Writing and Critical Review

Prof. Naveesh P.K.: Literature Review, Writing, Critical Review

Ms. Maneeja S.S.: Literature Review, Writing, Critical Review

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